Unitil
Unitil Service Corp.

CI Replacement Program 2000 Update

Date: May 17, 2000

Summary

This report provides an update on the status of the CI Replacement Program for this financial year. Operations indicates a revised agreement between Fitchburg Gas & Electric and the MDTE to increase the requirement to abandon cast iron pipe from 3,960' to 7,500' in 2000, and 10,000' thereafter.

Selection is based on several criteria including system requirements (general pressure improvements and new load), leakage/break history and City repavement schemes.

At the beginning of last year Mr. Nichols provided a network model of the Fitchburg and Gardner LP systems which provided a valuable insight into potential problem areas. In particular, it identified several locations in the vicinity of regulator stations subject to excessive pressure loss supporting field conditions, namely, the need to elevate regulator stations during times of peak demand. Following these improvements by replacing sections with 8" diameter HDPE pipe, the need to elevate regulator stations was drastically reduced.

The latest list of sections of pipe subject to excessive pressure loss submitted by Mr. Nichols earlier this week have been fully reviewed. One project was completed in 1999, two are scheduled for this year, and several are to be subjected to detailed network analysis with a view to advancing projects next year.

Within this year's program, the revised target of 7,500' has been achieved and projects have been selected to accommodate system improvements, City re-paving schemes, new marketing load, and to complete general system improvements initiated last year.

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Status of CI Replacement Projects submitted by Operations

Below is a summary of the status of the 13 projects submitted by Operations:

Projects completed in 1999

1	St Bernard St	Fitchburg	4"	CI	300'

This main was replaced with 8" HDPE pipe in conjunction with the Summer St project

Projects to be completed in 2000

2	Boutelle St	Fitchburg	4"	CI	280'
3	Prescott St	Fitchburg	4"	CI	780'

These two sections of pipe are scheduled for replacement under the Boutelle St project where 1,330' will be abandoned.

General System Reinforcement Projects

4	Westminster St	Fitchburg	6"	CI	280'

An Engineering design to overlay the 6" diameter LP main with 8" diameter HDPE pipe has been advanced. It was deferred in 2000 and will be resubmitted in 2001.

5	Pepper St	Fitchburg	4"	ST	1,330'

A proposal to relocate Pepper St RS combined with replacing or converting the 1,330' section of 4" ST to high pressure is under review for consideration in the 2001 construction year.

Cancelled Projects

6	Myrtle St	Fitchburg	6"	CI	850'

Investigation indicates this section of pipe is 6" CI and not 3" CI as modeled.

7	Winter St	Fitchburg	2"	ST	220'

Investigation indicates that in addition to this section of pipe is a 4" CI pipe located along the whole length of Winter St and tied in at Boutelle St.

8	Walnut St	Fitchburg	6"	CI	500'

Investigation indicates this section of pipe is 6" CI and not 4" CI as modeled.

9	Baker St	Fitchburg	6"	ST	200'

Investigation indicates this section of pipe actually crosses Main St towards Prospect St and is 6" ST and not 2" (shown on 200 scale plans). In addition, the CI Replacement project School St will remedy poor pressures in this area.

Projects Pending Network Analysis

10	Day St	Fitchburg	3"	CI	715'
11	Prichard St	Fitchburg	3"	CI	850'
12	Blossom St	Fitchburg	6"	CI	2,250'
13	Mechanic St	Fitchburg	6"	CI	1,870'

These sections of pipe are all located at the north end of town. In particular, Mechanic/Blossom are main feeds from Mechanic St RS. Currently there are no major pressure problems experienced as a direct result of these pipes, nevertheless, this area would greatly benefit from the CI replacement program.

It is proposed to undertake detailed network analysis and to formulate a series of reinforcements to introduce new HDPE spine mains to link the Mechanic St/North St regulator stations to the downtown area.

It is expected these projects will be advanced in 2001.

14	Canton St	Fitchburg	4"	CI	2,330'

This section of pipe as with many others is located on the outlet of a regulator station (Wanoosnoc). However, both Water St and Bemis Rd regulator stations are located in close proximity to this area and it would be prudent to undertake detailed network analysis to determine the most effective reinforcement of this area which may include station relocation or abandonment.

It is expected this project will be advanced in 2001.

Revised 2000 CI Replacement Program

This is the revised list of projects targeted this year to meet the revised target of 7,500' of cast iron abandonment.

1	Boutelle St	Fitchburg	4"	CI	705'

This project was fully designed based on abandoning 1,330 and reflected the need to reduce the excessive pressure losses on the immediate outlet of Prescott St RS. Since it is proposed to link Summer St to Prescott St RS it is intended to reduce this project in scope by not abandoning 625' of 4" CI in Prescott/Howard. This can be added later if necessary.

A revised EWR will be issued.

2	School St/Prince St	Fitchburg	4"	CI	850'

This project is fully designed and reflects the need to improve pressures in the vicinity of Applewild School as a result of new load.

Refer to EWR 00-02 dated February 16, 2000.

3	Hazel St	Fitchburg	4"	CI	580'

This project is fully designed and is advanced to replace a remaining section of pipe omitted from a replacement project last year as a result of City water improvements. The City now propose to repave Hazel St.

Refer to EWR 00-09 dated May 1st, 2000.

4	Summer St	Fitchburg	4"	CI	2,488'
			6"	CI	2,865'
					7,488'

This project is provisionally designed pending drawings and estimation.

The emphasis on this engineering design is to conclude the reinforcement initiative of last year to improve pressures in the Summer street area by laying a spine main from Bemis Rd RS into the area.

This project proposes to link with 8" diameter HDPE pipe several major sections of the downtown area, namely:

- *8" HDPE main in Summer St/St Bernards linking to Bemis Rd RS*
- *8" ST main in Harvard St linking across the proposed 5th St bridge to Water St*
- *16" CI main in Sawyer Passway linking to the Sawyer Passway RS*
- *8" HDPE main (proposed) in Boutelle St linking to Prescott St RS and Lunenburg st.*

This reinforcement will improve overall pressure to the area and improve the effectiveness of these regulator stations, in particular, reduce the reliance on Sawyer Passway RS. In addition, the City proposes to repave sections of Summer St and this will facilitate a new load to St Bernards High School.